

LC Laboratories

PMA (TPA) Purity: HPLC Tests Show Six Vendors Have Incorrect Purity Claims for Their PMA

We Found Only 95.3 - 97% Purity by HPLC in the Six Cases, Not the Claimed 99% or Higher Purity

March 28, 2018

PMA (phorbol 12-myristate 13-acetate, TPA) is a widely-used reagent for the study of the protein kinase C family, other related proteins that have phorbol ester receptors, and signal transduction phenomena mediated by these proteins.

LC Labs' >99.5% pure PMA is an extremely reliable reagent for in vitro and in vivo studies. It is available from us directly and from about 55 distributors and resellers who buy PMA from us and in turn sell it to end users.

However, there are numerous other PMA vendors who have apparently never purchased PMA from LC Labs or have not done so for many years. Recently we purchased samples of PMA from six of those vendors, all of whom claim $\geq 99\%$, >99% or >99.5% purity for their PMA product, and analyzed the samples using analytical HPLC.

[Here is a PDF file of the results of HPLC analyses](#) of several lots of LC Labs PMA and the six samples from vendors apparently not sourcing their PMA from us.

LC Labs PMA, Cat No. P-1680, Lot No. F-180 (our current lot – *page 1* of the PDF): **99.7%**.

Pages 2-5 show HPLC results for four earlier lots of LC Labs PMA. These four samples were set aside and frozen here in the years indicated on the chromatograms, then removed and analyzed about two weeks ago. All showed purity $\geq 99.6\%$, *even though they had been in our freezer for up to 19 years*. Notably, samples packaged in either flame-sealed or septum + crimp-sealed vials all showed excellent stability.

Alomone PMA, *page 6*, Cat. No. P-800, Lot No. PM-01, >99.5%% purity claimed, **97% purity found**, and the integration indicated 22% shortweight.

Biovision PMA, *page 7*, Cat. No. 1544-5, Lot No. 3J26L15440, >99% purity claimed, **96.4% found**.

Cayman PMA, *page 8*, Cat. No. 10008014, Lot No. 0503434-15, >99% purity claimed, **95.3% found**, and the integration showed 33% shortweight.

LKT PMA, *page 9*, Cat. No. P2857, Lot No. 25910080, >99% purity claimed, **95.8% found**.

Santa Cruz stopped buying PMA from LC Labs after 2011. When we analyzed their current PMA product late last year, Cat. No. SC-3576, Lot No. C2117, *page 10*, it was only about 96% pure, even though their product description claimed >99% purity and their Certificate of Analysis for that lot claimed >99.9% purity. That sample arrived in an amber screw-capped plastic tube.

We then requested and received a replacement from Santa Cruz. The new lot had the same catalog number but was Lot No. K1317, *page 11*. The 1-mg sample arrived in a flame-sealed snap-top glass ampule of the type the LC Labs uses to package some of our PMA. The HPLC analysis showed **99.7% purity**. It seems possible that this sample was from our 2011 shipment of PMA to Santa Cruz.

Several days after we had received and analyzed the (very pure) K1317 lot, we requested from Santa Cruz an additional sample of the impure C2117 lot but were informed that that lot was no

longer available.

Stemcell PMA, page 12, Cat. No.74072, Lot No.BX25211, >99% purity claimed, **96.6% found**.

Summary Our HPLC results indicate substantially lower PMA purity for the first Santa Cruz lot and for the other five vendors' lots than the >99% purity claimed by each of the six vendors. (The Materials and Methods details for these HPLC analyses will be posted on our website shortly.)

P-1680 Phorbol 12-Myristate 13-Acetate, >99.5%

1 mg.....\$ 26
5 mg.....\$ 98
10 mg.....\$ 169
25 mg.....\$ 339
100 mg.....\$ 1220

Highest purity, lowest prices: [View other vendors' prices and purity claims for PMA.](#)

Shipping & Handling: [Shipping and handling are free to the U.S. and 33 other countries.](#)

Please always [check our website](#) for the most up-to-date prices.

LOOK HERE FIRST for:

- **The Most Important Cell Signaling and Preclinical Oncology Compounds**
 - **The Highest Purities**
 - **The Lowest Prices**
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